ABSTRACT OF THE DISCLOSURE

A compact multi-element cascade circulator in which electrical and mechanical performance is enhanced while handling and assembly costs are reduced. The circulator includes a plurality of junctions connected in cascade to provide a plurality of non-reciprocal transmission path between signal ports on a network, and a metal housing with a cover in which the junctions are disposed. The plurality of junctions includes an oval permanent magnet, a multi-ferrite component including two (2) oblong ferrite elements, a dielectric constant medium disposed between the ferrite elements, and a plurality of conductor portions sandwiched between the ferrite elements. By configuring the multi-element cascade circulator to include the oval permanent magnet and the oblong ferrite component that are employed by more than one junction of the circulator, the multi-element cascade circulator achieves enhanced performance with reduced inventory and manufacturing costs.

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